

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

COLLISION COMMUNICATIONS, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Case No. 2:21-CV-308-JRG
	§	(Lead Case)
NOKIA SOLUTIONS AND NETWORKS OY and NOKIA OF AMERICA CORPORATION,	§	
	§	JURY TRIAL DEMANDED
	§	
Defendants.	§	

COLLISION COMMUNICATIONS, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Case No. 2:21-CV-327-JRG
	§	(Member Case)
TELEFONAKTIEBOLAGET LM ERICSSON and ERICSSON INC.,	§	
	§	JURY TRIAL DEMANDED
	§	
Defendants.	§	
	§	
	§	

DEFENDANTS' RESPONSIVE *MARKMAN* BRIEF

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TABLE OF ABBREVIATIONS AND EXHIBITS

Exhibit No.	Abbreviation	Description
	Op. Br.	Plaintiff Collision Communication, Inc.'s Opening Claim Construction Brief
	'851 Patent	U.S. Patent No. 7,724,851
	'620	U.S. Patent No. 7,233,620
	'492	U.S. Patent No. 7,593,492
	'479	U.S. Patent No. 9,888,479
	'561	U.S. Patent No. 10,477,561
1	Lanning	Declaration of Mark Lanning in Support of Claim Construction for U.S. Patent No. 7,724,851
2	'851 Patent FH	'851 Patent File History, Applicants' Response dated August 20, 2009
3	Mahon	Declaration of Mark Mahon, Ph.D. Regarding Construction of Disputed Terms for U.S. Pat. Nos. 7,233,620, 7,593,492, 9,888,479, and 10,477,561
4	'620 Patent FH	'620 Patent File History, Applicants' Amendment dated September 21, 2006
5	'479 Patent FH	'479 Patent File History, Pre-Brief Conference Request dated Aug. 18, 2017
	Feuerstein	Dkt. No. 67-10, Declaration of Dr. Martin J. Feuerstein, Ph.D. in Support of Collision Communications Inc.'s Claim Constructions for Terms in U.S. Patent Nos. 7,233,620 and 7,593,492
	Hochwald	Dkt. No. 67-9, Declaration of Dr. Bertrand Hochwald Ph.D. in Support of Collision's Claim Constructions for Terms in U.S. Patent No. 7,724,851

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I. INTRODUCTION

Defendants respectfully submit their response to Collision’s Opening Claim Construction Brief.¹ Defendants’ constructions flow directly from the intrinsic record. Collision’s constructions, on the other hand, misapply means-plus-function law, ignore clear statements of disavowal in the specification and prosecution history, and improperly attempt to use extrinsic expert testimony to contradict unambiguous intrinsic evidence.

II. THE ’851 PATENT

The ’851 Patent allegedly solves the problem of “increasing the throughput of transmitted bits in a multiuser detection (MUD) based multiple access communication system in which multiple users transmit information simultaneously on the same channel or frequency” (’851 Patent, 1:14-23). The ’851 Patent acknowledges that this problem could be solved using prior art MUD processing techniques (*id.*, 2:59-62). The ’851 Patent, however, proposes improving throughput by “taking more measurements of the received signals” and then stacking those signals into “one multidimensional signal for the purpose of MUD processing” (*id.*, 2:66-3:3).

A. “means for stacking each of said parameter estimate signals based on a time stamp of each of said parameter estimate signals for generating a desired set of parameter estimating signals acceptable to said multiuser detector” (Cl. 2)

Defendants’ Construction	Collision’s Construction
This term is subject to § 112(6).	
Function: stacking each of said parameter estimate signals based on a time stamp of each of said parameter estimate signals for generating a desired set of parameter estimating signals acceptable to said multiuser detector	
Structure: no corresponding structure (Indefinite)	Structure: processor programmed with algorithm described at 7:33-8:3.

The Parties agree that this term is a means-plus-function term and agree on the function.

¹ The ’479 and ’561 Patents are only asserted against Nokia, and thus the section of this brief addressing those patents is submitted on behalf of Nokia only.

The “means for stacking” term is indefinite because there is no corresponding structure disclosed in the specification that is capable of (i) stacking each of said parameter estimate signals, (ii) based on a time stamp of each of said parameter estimate signals, and (iii) for generating a desired set of parameter estimating signals acceptable to said multiuser detector. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351-52 (Fed. Cir. 2015).

1. There is no corresponding structure clearly linked to the function

The Court should reject Collision’s proposal that the corresponding structure is a processor with a particular algorithm as the specification does not link the claimed stacking function to a processor. The patent generally refers to a “stacking unit,” “Stack Measurement and Parameters” box, “stack measurement and parameter unit,” and similar terms, but it fails to provide any description of a structure, such as a processor, capable of performing the function of those units (*e.g.*, ’851 Patent, 7:64-8:7, Fig. 3, 6:40-48; Lanning, ¶¶ 61-62).

Collision’s citations to the specification do not clearly link the stacking unit to a processor (Op. Br., 11 (citing ’851 Patent, 6:64-7:4, 8:43-56, 9:1-5)). For example, one of the cites states that “the sorting unit 354 may include a parameter estimation refinement processing procedure” (6:64-7:4), but the parameter estimation refinement procedure is not the claimed stacking function. *See* ’851 Patent, cl. 2 (separately requiring a “parameter estimation unit”). Collision’s other citations are directed to general statements about the ability to use a processor or microprocessor with the purported invention. Such generic statements are of no avail because they fail to clearly link a structure to the function. *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1212 (Fed. Cir. 2003) (“In the past, we have rejected similar attempts to include as additional corresponding structure for a particular function a structure that is disclosed in the specification but is not associated with the particular claimed function”). Collision cannot create structure where there is none. *Alfred E. Mann Found. For Sci. Research v. Cochlear Corp.*, 841 F.3d 1334, 1344

(Fed. Cir. 2016) (“that a person of ordinary skill in the art would know . . . does not create structure in the patent where there was none to begin with”).

Therefore, the “means for stacking” term is indefinite for lack of corresponding structure.

2. There is no algorithm disclosed for “stacking each of said parameter estimate signals”

Nevertheless, even if the specification described that the “stacking” could be performed by a processor, the term remains indefinite because the specification does not disclose an algorithm capable of performing the entirety of the required function. *Williamson*, 792 F.3d at 1352. Specifically, Claim 2 recites “a first[/*second*] parameter estimating unit for generating first[/*second*] parameter estimate signal[s].” Claim 2 then requires “stacking each of said parameter estimate signals” that were generated from the parameter estimating units. The only disclosure in the specification, however, relates to stacking *received signals* from the collectors or the pre-processing units (’851 Patent, 4:17-25, 7:19-41; Lanning, ¶¶ 65-66).

The sole support for Collision’s proposed algorithm is the description of stacking unit 354, but stacking unit 354 does not stack parameter estimate signals. It stacks *digital received signals* using parameter estimation information (Op. Br. 11, citing ’851 Patent, 7:33-8:3 (“[t]his stacking is accomplished in the stacking unit 354, which uses the time stamp information and the parameter estimation information *to stack the digital received signals* into a vector measurement at each time sample.”)). In other words, the specification describes using the parameter estimates to stack the digital received signals from the pre-processing units but never describes any algorithm for stacking parameter estimate signals, as required by the claim. This distinction is also reflected in the claims. For example, claim 10 includes a “means for stacking *said received signals*” whereas claim 2 requires a “means for stacking each of said *parameter estimate signals*.”

Collision also conflates two distinct concepts – stacking the digital received signals and

combining separate sets of parameter estimates. The '851 Patent describes that stacking unit 354 “***combines*** the separate sets of parameter estimates ***received from each collector*** into one set of parameter estimates . . .” (Hochwald, ¶ 69 (quoting '851 Patent, 7:33-8:3) (emphasis added)). Combining separate sets of parameter estimates is not the same as stacking the received signals. For example, claim 1 distinguishes between “stacking said signals received from each of said parameter estimation units” and “combining separate sets of parameter estimates” ('851 Patent, cl. 1). Moreover, the claim requires parameter estimate signals generated from the parameter estimating units, not estimates received from a collector (Lanning, ¶ 70). Collision attempts to rewrite the claims to track the specification through expert testimony, but that testimony cannot be used to contradict the intrinsic record. *Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1003 (Fed. Cir. 2016).

Finally, Collision alleges that the stacking algorithm disclosed is to “concatenate the received estimated parameters into a multidimensional signal matrix” (Op. Br., 12), but the only matrix described in the specification is the “matrix, S, to represent the received waveforms associated with each user transmitted waveforms” – *i.e.*, the digital received signals at the collector and not the parameter estimate signals generated at the parameter estimator ('851 Patent, 7:42-48). Collision thus effectively argues that a POSITA would have been able to devise an algorithm for stacking, but it is irrelevant whether the required algorithm would have been simple for POSITA. The law requires that the algorithm be disclosed in the specification. *Alfred E. Mann*, 841 F.3d at 1344 (“The question before us is whether the specification contains a sufficiently precise description of the ‘corresponding structure’ . . . not whether a person of skill in the art could devise some means to carry about the recited function”) (internal citations omitted).

Since there is no disclosure of any algorithm for stacking parameter estimate signals

generated from the parameter estimating units, this term is indefinite.

3. There is no disclosure of “based on a time stamp of each of said parameter estimate signals”

This term is also indefinite because there is no disclosure of any algorithm for stacking “based on a time stamp.” Collision’s only purported support for this part of the claimed function merely repeats the claim language, stating “which uses the time stamp information and the parameter estimation information to stack the digital received signal into a vector measurement at each time sample” (Op. Br., 14; ’851 Patent, 7:66-8:3). Notably, the time stamp here is of the received signal, not the parameter estimate signals. Thus, contrary to Collision’s argument, the specification does not inform a POSITA with reasonable certainty how to perform stacking “based on a time stamp of each of said parameter estimate signals.” *i4i Ltd. P’ship v. Microsoft Corp.*, No. 6:07CV113, 2008 U.S. Dist. LEXIS 129289, at *36 (E.D. Tex. Apr. 10, 2008) (“The diagrams and the accompanying text do not disclose an algorithm and merely restate the claimed function”).

Again, Collision’s expert attempts to cure this defect by devising a means to stack parameter estimate signals that is not disclosed in the specification, referring to an algorithm that requires “Repeat for each time sample” (Hochwald, ¶¶ 73-74). The test is whether the specification discloses the algorithm, not whether an expert could devise an algorithm. *Function Media, L.L.C. v. Google Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013). Moreover, even if “Repeat for each time sample” was the disclosed algorithm, it would not be adequate to satisfy the claimed function (Lanning, ¶¶ 67, 160-161). *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015) (“Where a disclosed algorithm supports some, but not all, of the functions associated with a means-plus-function limitation, we treat the specification as if no algorithm has been disclosed at all”).

4. There is no disclosure “for generating a desired set of parameter estimating signals acceptable to said multiuser detector”

The “means for stacking” term is also indefinite because the specification lacks any disclosure that would inform a POSITA with reasonable certainty as to how to perform “generating a desired set of parameter estimating signals acceptable to said multiuser detector” (Lanning, ¶¶ 68, 72). The terms “generating,” “desired set of parameter estimating signals,” and “acceptable to said multiuser detector” do not even appear in the specification. At best, the specification describes “combin[ing] the separate sets of parameter estimates received from each collector into one set of parameter estimates,” but this again cannot be the “desired set of parameter estimating signals,” which must be generated at the parameter estimating units rather than be received from each collector (*id.*; *see also* cl. 1 (“stacking said signals received from each of said parameter estimation units” is distinct from “combining separate sets of parameter estimates”)). Furthermore, the specification does not disclose what parameter estimating signals are “desired” or “acceptable to said multiuser detector” (Lanning, ¶ 72). Collision’s expert does not even attempt to address this point. Rather, Collision appears to argue that these limitations are inherent (Op. Br., 15), but that is not the standard for whether an algorithm is properly disclosed.

B. “means for stacking said received signals based on a time stamp of said signals and a set of parameters corresponding to each of the transmitted signals as received at each of the signal collectors” (Cl. 10)

Defendants’ Construction	Collision’s Construction
This term is subject to § 112(6).	
Function: stacking said received signals based on a time stamp of said signals and a set of parameters corresponding to each of the transmitted signals as received at each of the signal collectors	
Structure: no corresponding structure (Indefinite)	Structure: processor programmed with algorithm described at 7:26-8:3.

The Parties agree that this term is a means-plus-function term and agree on the function. The Parties again dispute whether the specification provides the corresponding structure necessary

to perform the required function. As with the previous term, this “means for stacking” term is indefinite because no corresponding structure capable of performing the entirety of the required function is disclosed in the specification.

For the same reasons described in the prior term, there is no disclosure clearly linking a “means for stacking” to a processor. In addition, for the same reasons explained for the previous “means for stacking” term, this term is indefinite because there is no disclosure of any algorithm that stacks “based on a time stamp.”

C. “a stacking device for stacking measurements and combining parameters between each of said parameter estimation units” (Cl. 3)

Defendants’ Construction	Collision’s Construction
Means-plus-function	Plain and ordinary meaning
Function: stacking measurements and combining parameters between each of said parameter estimation units	To the extent this term is determined to be subject to 112 § 6:
Structure: no corresponding structure (Indefinite)	Function: stacking measurements and combining parameters between each of said parameter estimating units
	Structure: processor programmed with algorithm described at 7:26-8:3.

The Parties dispute whether this term is a means-plus-function term. Because “a stacking device for stacking” is a nonce term that does not connote structure to a POSITA, the term is means-plus-function and must be construed. The Parties agree that if the term is means-plus-function, the function is “stacking measurements and combining parameters between each of said parameter estimation units,” but the Parties disagree as to the corresponding structure. Similar to the other “means for stacking” terms, this term is indefinite because there is no corresponding structure that is clearly linked to the required function.

1. Means-plus-function applies

The presumption against means-plus-function when a term is written without “means for”

is not strong. *Egenera, Inc. v. Cisco Sys.*, 972 F.3d 1367, 1373 (Fed. Cir. 2020); *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1367 (Fed. Cir. 2022) (“preponderance of the evidence”). The presumption is overcome if the term does not have commonly understood meaning and is not generally viewed by one skilled in the art to connote a particular structure. *Dyfan*, 28 F.4th at 1366; *Intelligent Water Solutions, LLC v. Kohler Co.*, No. 2:16-CV-689, 2017 U.S. Dist. LEXIS 86164 at *9-10 (E.D. Tex. June 5, 2017). Generic nonce terms, such as “device,” may be tantamount to using the word “means” even if the term is combined with an adjectival modifier when the combination still does not have an understood meaning in the art or belong to a class of structures. *Huawei Techs., Co. v. T-Mobile US, Inc.*, No. 2:16-CV-00056-JRG-RSP, 2017 U.S. Dist. LEXIS 79836 at *67 (E.D. Tex. May 24, 2017). An example is a “coined term,” which may be created for use in the patent and thereby invoke means-plus-function treatment. *Egenera*, 972 F.3d at 1373.

The term “stacking device” is not a term of art that a POSITA would recognize as having a definite meaning as connoting structure, nor does it appear anywhere in the specification other than in claim 3 (Lanning, ¶ 76). The only purported novelty of the ’851 Patent is the “stack measurements and parameters” box, as every other component was admitted prior art (*id.*; ’851 Patent, *compare* Fig. 2 with Fig. 3). While Collision’s expert opines that this sole point of novelty was “known and trivial,” that does nothing to address that there is no well-known and accepted structure that a POSITA would recognize for “a stacking device for stacking” (Hochwald, ¶ 100; Lanning, ¶ 77). In short, “stacking device” is a term coined specifically for the patent to describe allegedly novel functionality, not a structure. Accordingly, the term should be construed as a means-plus-function term. *Advanced Ground Info. Sys., Inc. v. Life360, Inc.*, 830 F.3d 1341, 1347-48 (Fed. Cir. 2016) (“the term . . . is a term coined for the purposes of the patents-in-suit [and] is not used in ‘common parlance or by persons of skill in the pertinent art to designate structure’”).

Indeed, Collision’s expert himself fails to identify any specific structure beyond “a known *device that performs* the ordinary and trivial process of stacking values” (Hochwald, ¶ 100) (emphasis added). But this is exactly the kind of functional language that results in a means-plus-function term. *Diebold Nixdorf, Inc. v. ITC*, 899 F.3d 1291, 1301 (Fed. Cir. 2018) (applying 112(6) when the expert “did little more than opine that a skilled artisan would understand the functional term ‘cheque standby unit’ to be *any* structure capable of performing the claimed function”) (emphasis in original); *Huawei Techs.*, 2017 U.S. Dist. LEXIS 79836 at *67 (“because it sets forth the same black box recitation of structure for providing the same specified function as if the term ‘means’ had been used”). There is no debate that “device” is a nonce term (Hochwald, ¶ 27). *Williamson*, 792 F.3d at 1350. And neither Collision nor its expert present any evidence that the term “stacking device” has ever been used (or understood) outside of the ’851 Patent.

Collision’s case law regarding a “circuit,” “processing device,” and “comparing device” are irrelevant because in each of those cases there was evidence that the term was understood to connote a set of structures. Here, there is no such evidence that “stacking,” even if it was a known to be a trivial *process*, connoted any specific structure. As such, the term should be construed as means-plus-function as courts have repeatedly done with similar terms. *Media Rights Techs.*, 800 F.3d at 1372-73 (“None of these passages, however, define ‘compliance mechanism’ in specific structural terms”); *Huawei Techs.*, 2017 U.S. Dist. LEXIS 79836 at *67 (“this [identifying unit] combination does not have an understood meaning in the art or belong to a class of structures”).

2. There is no corresponding structure clearly linked to the function

Similar to the prior “stacking” terms, there is no disclosure in the specification that clearly links stacking “measurements and combining parameters” to a processor. Therefore, for the same reasons discussed above, this term is indefinite because there is no processor or other corresponding structure disclosed that is clearly linked to the claimed function. Specifically, as

described above, the only disclosure in the specification relates to stacking received signals from the collectors, not measurements between each of the parameter estimation units (*see supra*, II.A.1.b; Lanning, ¶ 84).

3. There is no disclosure of “stacking measurements and combining parameters between each of said parameter estimation units”

Nevertheless, even if a processor was disclosed for “stacking,” the term remains indefinite because the specification does not disclose an algorithm that is capable of both “stacking measurements . . . *between each of said parameter estimation units*” and “combining parameters *between each of said parameter estimation units*,” as required by the claims. The only disclosure of stacking measurements describes stacking measurements of the received signals at the collectors, not measurements between each of the parameter units (’851 Patent, 2:59-61 (“independent measurements of the received signal”), 4:40-47 (“measurements to be taken of the received signal”), 7:27-33 (“phase measurement and one quadrature measurement associated with each collector”). Therefore, this term is indefinite because there is no disclosure of an algorithm that can perform “stacking measurements . . . *between each of said parameter estimation units*.”

D. “means for including at least two matrices . . .” (Cls. 9, 11)

Defendants’ Construction	Collision’s Construction
<p>This term is subject to § 112(6).</p> <p>Function: including at least two matrices based on signals received from each signal collector, each due to a different collection site of each said collector, stacked upon each other to create a new signal matrix (cl. 9) / including at least two matrices based on signals received from said first collector and said second collector, stacked upon each other, each due to a different collection site of said first collector and said second collector (cl. 11)</p>	
Structure: no corresponding structure (Indefinite)	Structure: processor programmed with algorithm described at 7:33-8:3.

The Parties again agree that these terms are means-plus-function terms and agree on the corresponding functions. These terms are indefinite because there is no corresponding structure disclosed in the specification that is capable of performing the entirety of the required function,

which requires including at least two matrices based on signals received from each signal collector, each due to a different collection site of each said collector, stacked upon each other to create a new signal matrix. This failure is highlighted by the fact that Collision cites to the same algorithm for the “stacking” terms in the independent claims as the “means for including” in the dependent claims.

The specification refers to “include several S matrices” and “include several matrices” but never associates those passages to any particular structure (*e.g.*, ’851 Patent, 3:17, 4:48-49, 7:51; Lanning, ¶¶ 103, 115). Collision again alleges that the structure must be a processor, but Collision’s cites do not clearly link the “means for including” to a processor. A generic statement that the “‘present invention’ can be implemented using a ‘processing unit in the base station’” does not clearly link the processor to the “means for including” function (’851 Patent, 8:49-51). *Med. Instrumentation*, 344 F.3d at 1212; *Alfred E. Mann*, 841 F.3d at 1344 (“the patent does not disclose which component performs the logarithmic conversion function”). Furthermore, the passage that Collision and its expert cite refers to “allow[ing] for channel assignment reuse of commercial wireless communications or higher packing of information,” and has nothing to do with the “means for including” function (’851 Patent, 8:49-51).

Even if a processor was disclosed and clearly linked to “including,” the term remains indefinite because the specification does not disclose an algorithm capable of performing the entirety of the required function. *Williamson*, 792 F.3d at 1352. The only description of “including” matrices is a nearly verbatim repeat of the claim language that “the signal model is expanded to include several S matrices, one stacked upon the other, where each S matrix is each due to a different collection site at the receiver” (’851 Patent, 3:16-21, 4:48-53; Lanning, ¶¶ 105, 117). This description is insufficient because it fails to provide any algorithm for *how* the function

is accomplished. *i4i Ltd. P'ship*, 2008 U.S. Dist. LEXIS 129289, at *36; *Vantage Point Tech.*, 2015 U.S. Dist. LEXIS 16316, at *58.

The algorithm Collision proposes fares no better. Collision mistakenly asserts “the claim’s ‘new signal matrix’ to be stacked parameter estimates” (Op. Br., 16). Collision’s interpretation contradicts the plain language of the claim that requires the matrices be based on the signals received from the collectors, and not the parameter estimates from the parameter estimators. Collision’s assertion also contradicts the specification, which explains that the matrix is for the signals received from user transmissions, and not any parameter estimations (’851 Patent, 7:42-48 (“matrix, S, to represent the received waveforms associated with each user transmitted waveforms”), 3:12-21).

Moreover, the portions of the specification in Collision’s proposed construction do not disclose “receiving the parameter estimations from the parameter estimators in the form of matrices and concatenating these into a higher ranked matrix” (See Op. Br., 16). As explained, the specification only discloses a matrix of received signals from the signal collectors (’851 Patent, 7:42-48, 3:12-21; Lanning, ¶¶ 106, 110, 118, 120).

Since there is no corresponding structure for performing the entire function of the claimed “including” terms, under either Collision’s incorrect interpretation of the required function or under the correct interpretation, these terms are indefinite.

E. “multiuser detection unit” / “multiple user detector” / “multiuser detector” / “multiuser detecting unit” / “multiuser detector” / “multiple user detector” / “MUD” (Cls. 1–3, 9–11)

Defendants’ Construction	Collision’s Construction
multiuser detection unit that receives signals <u>with all interference intact</u> that are not beamformed <u>and that are not spatially nulled</u>	multiuser detection unit that receives signals that are not beamformed

The Parties agree that the “multiuser detection unit” terms require construction to account

for specification and prosecution history disclaimers, but the Parties disagree on the disclaimers' scope. The Parties agree that disclaimer requires the terms to be construed to mean at least a "multiuser detection unit that receives signals that are not beamformed." The Parties dispute whether "with all interference intact" and "that are not spatially nulled" are disclaimed. Defendants' proposed construction should be adopted because it captures the full disclaimer.

Disclaimer occurs when a "patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Comp. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). For example, "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent." *Id.* at 1366. Additionally, "[p]rosecution disclaimer can arise from both claim amendments and arguments." *Speedtrack, Inc. v. Amazon*, 998 F.3d 1373, 1379 (Fed. Cir. 2021) (internal citations omitted). When there is "clear and unmistakable disclaimer," a patentee cannot then recapture through claim interpretation that subject matter which was disclaimed. *Thorner*, 669 F.3d. at 1366-67; *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003).

Here, the patentee clearly and unmistakably disclaimed a multiuser detection unit that receives signals that (i) are beamformed or spatially nulled or (ii) do not have all interference intact. Therefore, the claim construction should properly account for this disavowal.

1. The applicant disclaimed "spatial nulling"

The Parties agree that both the specification and prosecution history clearly disclaim beamforming (Op. Br., 2-3). Collision's expert highlights that the '851 Patent specification disclaims beamforming, but the portion of the specification that he cites also expressly disclaims spatial nulling.

110. A POSITA would understand from the '851 Patent specification and file history that the applicant was excluding beamforming from being used prior to the multiuser detection process. For example, the '851 Patent specification states:

The procedure in accordance with this invention is *not beamforming or spatial nulling prior to sending the signal along for processing*.

'851 Patent at 5:46-48.

(Hochwald, ¶¶ 110, 63; Lanning, ¶¶ 123-125). The prosecution history goes further to state that “Applicants’ multi-receiver MUD *replaces* the beamformer and equalizer and *cannot be created* by putting a beamformer and equalizer [] together” ('851 Patent FH, 21) (emphasis added); Lanning, ¶ 131). On this basis, Applicants argued that the prior art’s “adaptive nulling/beamforming” “does not perform multiuser detection in any way” ('851 Patent FH, 17-18) (emphasis added); (Lanning, ¶ 132).

Collision does not dispute that the specification and prosecution history clearly and unmistakably disavow beamforming *and* spatial nulling. Rather, Collision argues including “spatial nulling” in the construction is “superfluous” because “beamforming” and “spatial nulling” are the same thing (*see* Op. Br., 3), but Defendants disagree that those terms are synonymous (Lanning, ¶¶ 135-143). Collision’s argument is contrary to the intrinsic record, which separately disclaims beamforming and spatial nulling (Lanning, ¶¶ 144-145; '851 Patent, 5:46-48; '851 Patent FH, 17). The Court should reject Collision’s attempt to use expert testimony to contradict the intrinsic record, and instead adopt a construction that tracks the disclaimer and clarifies that both beamforming and spatial nulling are disclaimed. *Ruckus Wireless*, 824 F.3d at 1003.

2. The Applicants disclaimed removing interference before the multiuser detection unit

The Court should also adopt the requirement in Defendants’ construction that the MUD

receive signals “with all interference intact” because Applicants clearly and unmistakably disclaimed systems that remove interference before the MUD.

- “Applicants’ invention also does not form multiple different beams in space. Applicants’ invention does not even form one beam in space. Applicants’ invention ***needs to feed the MUD*** with the received signal from multiple collection sites, ***with all the interference intact*** and with the appropriate parameter estimates that allow the received signal model to be defined to the level that the MUD receiver requires so that it can run as it is made to do.” (’851 Patent FH, 19).
- “Applicants’ invention collects signals and estimates the necessary parameters for each collection location and then puts the received signals together and the parameters to allow for the defining of the details of a MUD algorithm to perform MUD ***which operates in the complete unaltered*** and now higher dimensional space-time space in which these signals exist.” (*id.*, 21).

Collision argues that a MUD receiving a signal with “all interference intact” is the expected result of not beamforming, and not the basis for distinguishing” the prior art (Op. Br., 4). This argument ignores that the disclaimer is broader than excluding beamforming. The Applicants are clear that the signals received at the MUD have “all interference intact” and are received “at their fullest strength” and are “completely unaltered” by beamforming, spatial nulling, or any other process. *Speedtrack*, 998 F.3d at 1380 (“An applicant’s argument that a prior art reference is distinguishable on a particular ground can serve as a disclaimer of claim scope even if the applicant distinguishes the reference on other grounds as well.”) (internal citations omitted). For example, Applicants’ statement that the “invention needs to feed the MUD” “with all the interference intact” continues on to also state “and with the appropriate parameter estimates that allow the received signal model to be defined,” the latter of which has nothing to with beamforming and demonstrates that the entire sentence was not limited to just beamforming (Lanning, ¶¶ 149-150). For another example, when the Applicants argued that the “MUD [] operates in the complete unaltered” space, there was no mention anywhere in that entire paragraph of beamforming (’851 Patent FH, 21).

Collision’s citation to filtering in the specification is irrelevant because it refers to “signals

outside of the band of interest” of dependent claim 4 and do not address the independent claim’s focus (the band of interest or received signals) (Op. Br., 4; ’851 Patent, 8:49-51). The citation thus does not justify Collision’s attempt to reclaim subject matter unmistakably disavowed.

F. “parameter estimation unit[s]” / “parameter estimating unit[s]” (Cls. 1–3, 10)

Defendants’ Construction	Collision’s Construction
unit that estimates all values that would be required to write down the received signal equation as a summation of multiple transmitted signals, including the number of transmitted signals and any frequency offset, as well as the unique channel that each transmission went through to get to the receive antenna, and without any pre-ordained assumptions made as to the delays on each of the possible multipaths	Plain and ordinary meaning

The parameter estimation unit terms must be construed, and Defendant’s construction adopted, because the Applicants made clear and unmistakable arguments differentiating this aspect of their invention over the prior art in order to overcome rejection and secure issuance of the patent.

During prosecution, the Applicants addressed the “Examiner’s rejection of claims 8, 24-31, 33, and 34 . . . in view of Yellin,” to which the Applicants “respectfully traversed” by arguing that “Yellin operates much differently than Applicants’ claimed invention” (’851 Patent FH, 8-9). More specifically, the Applicants argued “Yellin’s channel estimator is forced to estimate the channel amplitude” and “[m]oreover, only the channel amplitudes are estimated, one for each pre-ordained assumption of a delay (multipath)” (’851 Patent FH, 10). Applicants then distinguished Yellin on the basis that:

“Applicants’ parameter estimator estimates all values that would be required to write down the received signal equation as a summation of multiple transmitted signals, so Applicants’ channel estimator needs to estimate the number of transmitted signals, as well as the unique channel that each transmission went through to get the received antenna. No pre-ordained assumptions are made as to the delays on each of the possible

multipaths. Applicants’ parameter estimator estimates any frequency offset, ***which the Yellin channel estimator does not.***” (*id.*) (emphasis added).

Applicants’ emphasis on what the parameter/channel estimator “needs to” do as compared to what the prior art “channel estimator does not” do amounts to clear and unmistakable disclaimer. *Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015). Defendants’ construction is a near verbatim incorporation of the Applicants’ unambiguous statements during prosecution, which is colorfully shown in Collision’s opening brief (Op. Br., 6).

Collision argues these statements are not disclaimer because the Applicants’ statements were not intended to overcome the Examiner’s rejection (Op. Br., 6). Collision’s argument is nonsensical and factually incorrect. As explained above, the Applicants prefaced their disclaimer statements by stating that they were traversing the “Examiner’s rejection of claims 8, 24-31, 33, and 34 . . . in view of Yellin” (’851 Patent FH, 8-9). Furthermore, the disclaimer statements themselves were expressly made about the “Applicants’ parameter estimator,” which referred to the “parameter estimation unit” elements in the rejected claims (Lanning, ¶¶ 153, 156).

Finally, Collision’s assertion that Defendants’ proposed construction is “unclear and imprecise” is contradicted by the fact that it is the Applicants’ own language characterizing their claimed invention and that many of the phrases also appear in the specification itself (Lanning, ¶ 157). Indeed, Collision offers no explanation how any of the Applicants’ own words are imprecise or confusing, nor does Collision provide any expert testimony in support.

G. “time stamp information from each independent signal receiving collector's preprocessed signal” / “time stamps provided by said at least two parameter estimation units and said at least two preprocessing units” (Cls. 1, 3)

Defendants’ Construction	Collision’s Construction
time stamp information at the signal collector from each independent signal receiving collector's preprocessed signal / time stamps at respective signal collectors provided by said at	Plain and ordinary meaning

least two parameter estimation units and said at least two preprocessing units	
--	--

As with the previous term, the Parties’ dispute whether Applicants’ arguments made during prosecution to characterize their invention and overcome prior art amount to disclaimer.

As Collision agrees, during prosecution, the Examiner rejected multiple claims because “the use of time stamps to determine signals of the same time would have been predictable to one of ordinary skill in the art” over the prior art (’851 Patent FH, 20; Op. Br., 8-9). The Applicants responded that “[t]he use of time stamps in Applicants’ invention is to know which part of the received signal at one collection site matches up with the received signal at a different collection site to allow Applicants’ device to stack up portions of the received signal that coincide with the same bit or symbol” (’851 Patent FH, 20). Applicants explained that “[k]nowing the time each user transmitted its bit is actually of no use” but rather “Applicants’ device *needs to know when* the aggregate of all transmitted signals were received *at each signal collector* so Applicants can stack the correct parts of the signals collected at different collectors so that they roughly line up in time” (*id.*) (emphasis added).

Therefore, Applicants clearly and unmistakably disclaimed general time stamps, which are of “no use” and are obvious over the prior art. In order to overcome the prior art, Applicants specified “time stamp information *at the signal collector*” because the Applicants’ invention “needs to know” when signals were received “at each signal collector” (*id.*). Defendants’ construction accounts for this simple and straightforward disavowal and is consistent with the specification, which states repeatedly that “[u]sing the present invention . . . [e]ach collected signal at the base station would be time stamped” (’851 Patent, 3:33-43 (emphasis added), 3:11-16). *Regents of the Univ. of Minn. v. AGA Med. Corp.*, 717 F. 3d 929, 936 (Fed. Cir. 2013) (“When a patent thus describes features of the ‘present invention’ as a whole, this description limits the

scope of the invention”). Defendants’ construction is also consistent with the claims themselves, which recite “time stamp information *from each independent signal receiving collector’s* preprocessed signal (’851 Patent, cl. 1 (emphasis added), cl. 3 (“wherein the time stamps include a time stamping of the incoming signals”); Lanning, ¶¶ 160-162).

Collision attempts to reclaim this disavowed subject matter by mischaracterizing the intrinsic record. Collision argues that precision timing information is not needed (Op. Br., 9). But the timing information’s exact precision has nothing to do with this term’s dispute. Nor did that address the Examiner’s rejection that “the use of time stamps to determine signals of the same time would have been predictable to one of ordinary skill in the art” (’851 Patent FH, 20). The issue is that the Applicants stated that the time stamps must be *at the signal collector* in order for the invention to work and be distinguishable from the prior art. Collision ignores the critical sentence from the file history that: “Applicants’ device *needs to know when* the aggregate of all transmitted signals were received *at each signal collector so Applicants can stack the correct parts* of the signals collected at different collectors so that they roughly line up in time” (*id.*) (emphasis added).

Collision is thus incorrect that “the inventors never distinguished any prior art based on their ‘at each signal collector’ statement” (Op. Br., 9). In fact, this is exactly what the Applicants did. Accordingly, Defendants’ construction should be adopted as being true to the intrinsic record, and Collision’s construction should be rejected as an improper attempt to recapture subject matter surrendered during prosecution.

III. THE ’620 PATENT

The ’620 Patent is generally directed to a telecommunication system with a bandwidth efficient modem and network controller (*see* ’620 at 5:13-28). According to the ’620 Patent, bandwidth efficient modems can remove interference, but not noise, and can share a channel with other bandwidth efficient modems if noise is acceptable (*see id.* at 8:17-40, 11:56-64).

A. “each of one or more interfering signals” (Claim 1)

Defendants’ Construction	Collision’s Construction
“all interfering signals”	plain and ordinary meaning

The parties dispute whether “each of one or more interfering signals” requires the reconstruction of every interfering signal (Defendants’ position) or only a subset of interfering signals. The Court should adopt Defendants’ proposed construction because it gives meaning to all words in the claim. Although Plaintiff purports to not construe the claim term, Plaintiff’s interpretation under the plain and ordinary meaning reads the words “each of” out of the claim, is inconsistent with all embodiments in the specification, and ignores a clear and unambiguous statement in prosecution that unlike the prior art, the patentee’s invention “reconstruct[s] all signals and all interfering signals.”

The claim requires “a digital signal processor for reconstructing an estimate of *each of one or more interfering signals* and calculating a noise power...” (*see* ’620 at cl. 1; emphasis added). The plain language that requires reconstructing an estimate of each interfering signal, which would require reconstruction of all interfering signals.

Reconstructing all interfering signals is fundamental to the purported invention as described in the specification. For example, “[t]he method of the present invention applies to any number of interfering digital signals on the same channel provided that sufficient signal to noise margin exists to jointly demodulate *all of the signals*” (’620 at 3:58-61; *see* Mahon, ¶37; emphasis added). The bandwidth efficient modem that is “[a]n object of the invention” similarly includes “a digital signal processor for reconstructing an estimate *of each interfering signal* and calculating a noise power, wherein the noise power is used to determine whether there is a sufficient noise margin to add additional users.” (’620 at 5:13-24; *see* Mahon, ¶37; emphasis added).

The patent explains that the bit processing computer, which corresponds to the claimed

digital signal processor, “reconstructs an estimate *of each interfering signal*.” (’620 at 10:38-42; *see* Mahon, ¶¶38-40; *emphasis added*). “This processing *requires knowing the power of every interfering element in the channel whether signals or noise*” (’620 at 10:42-47; *see* Mahon, ¶40; *emphasis added*). The noise power calculation “requires adding all the signal models” (i.e., the reconstructed signals) and subtracting the total signal power in the channel from the total power in the channel (’620 at 10:50-52, 10:56-59, 11:9-19, 11:27-29; *see* Mahon, ¶41). A POSITA would understand that the “required” calculation can only be performed if *all* interfering signals are reconstructed (Mahon, ¶41).

Moreover, the purported invention would be inoperative if only some, as opposed to every, interfering signal could be reconstructed (Mahon, ¶43). The patent explains that interfering signals are “deterministic” and can be removed from a channel (’620 at 11:56-62; *see* Mahon, ¶41). In contrast, noise is “random and unpredictable” and cannot be estimated nor removed from a channel (’620 at 11:56-62; *see* Mahon, ¶41). The network controller uses noise power to determine if there is sufficient noise margin to add users (’620 at cl. 1, 9:17-36; *see* Mahon, ¶43). The purported invention would be inoperative if less than all interfering signals were reconstructed because its noise power calculation would erroneously include interference (Mahon, ¶43). Thus, the specification makes clear that a POSITA would understand that “each of one or more interfering signals” means “all interfering signals” (Mahon, ¶44).

The prosecution history further supports Defendants’ proposed construction. The Applicant distinguished Liu on three grounds. For one ground, Applicant argued that in Liu “there is certainly no description of reconstructing *all signals and all interfering signals* as described in the present application” (’620 Patent FH, 9; *see* Mahon, ¶44; *emphasis added*). The Applicant further explained that “[t]he present invention jointly demodulates *intended transmission signals*

and any interfering transmissions” (’620 Patent FH, 9; *see* Mahon, ¶¶44; emphasis added). The Applicant thus clearly and unmistakably disclaimed Liu’s reconstruction of less than all interfering signals in favor of the claimed reconstruction of all interfering signals.

Collision contends that Applicant’s statement during prosecution should be ignored because the Applicant also distinguished Liu based on other grounds. Collision “cannot escape the import of [an applicant’s] statements to the Patent Office by suggesting they were not needed to overcome the Examiner’s rejection. . . . [T]he public is entitled to rely on these statements as defining the scope of the claims.” *See Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1383 (Fed. Cir. 2021). And “an applicant’s argument that a prior art reference is distinguishable on a particular ground can serve as a disclaimer of claim scope even if the applicant distinguishes the reference on other grounds as well.” *Traxcell Techs., LLC v. Nokia Sols. & Networks Oy*, 15 F.4th 1136, 1141 (Fed. Cir. 2021). Therefore, a POSITA understands Applicant’s statements during prosecution to be a clear and unmistakable disclaimer (Mahon, ¶¶46-47). Collision also incorrectly asserts that the word “all” in Defendants’ construction could require “that one single estimate is generated for a combination of all interfering signals” (Op. Br., 24; *see* Feuerstein, ¶¶40). Collision’s argument is a straw man. Defendants construction of “all interfering signals” does not require “the sum of” all signals. Defendants’ proposed construction should be adopted because it is supported by the claim language, specification, and prosecution history.

IV. THE ’492 PATENT

The ’492 Patent alleges that prior art multi-user detector (MUD) receiver designers had to choose between low-complexity MUDs with poor performance and complex MUDs with higher performance (*see* ’492 at 4:24-34, 5:5-13). The patent discloses replacing the single MUD in a conventional MUD receiver with multiple different MUDs and using a so-called “multi-user detector decision unit” to determine which of the multiple MUDs is more suitable to the changing

environment based on certain decision criteria (*see id.* at 12:52-67).

A. “multi-user detector decision unit using decision criteria to determine a selected multi-user detector” (Claim 1)

Defendants’ Construction	Collision’s Construction
Means-plus-function Function: using decision criteria to determine a selected multi-user detector Structure: processor with any of the algorithms described at 8:12-18, 13:35-14:40, 15:3-15:21, 19:43-48, 19:56-62, 20:41-49	Plain and ordinary meaning If this term is subject to § 112(6): Function: “using decision criteria to determine a selected multi-user detector” Structure: decision logic components with any of the algorithms described at 8:12-18, 13:35-14:40, 15:3-15:21, 19:43-48, 19:56-62, 20:41-49

The parties disagree whether the disputed term is governed by § 112(6). In the event that the court finds this term is governed by § 112(6), the parties mostly agree on the structure and function.²

As described above, the presumption against means-plus-function when a term is written without “means for” is not strong and is on a “a balanced analytical scale.” *Egenera*, 972 F.3d at 1373; *Williamson*, 792 F.3d at 1348-49; *Dyfan, LLC v. Target Corp.*, 28 F.4th at 1367. The presumption is overcome if the term does not have commonly understood meaning and is not generally viewed by one skilled in the art to connote a particular structure. *Dyfan*, 28 F.4th at 1366. Further, generic nonce terms, such as “unit,” may be tantamount to using the word “means” even if the term is combined with an adjectival modifier when the combination still does not have an understood meaning in the art or belong to a class of structures. *Huawei Techs.*, 2017 U.S. Dist. LEXIS 79836 at *67. An example is a “coined term,” which may be created for use in the patent and thereby invoke means-plus-function treatment. *Egenera*, 972 F.3d at 1373.

² Collision incorrectly argues in its brief that Defendants contend that each and every algorithm need be implemented in the Accused Products. That is not and has never been Defendants’ contention.

Collision erroneously cites multiple cases for its proposition that the lack of the word “means” and structural connections in the claim “**strongly** militate against applying § 112(6).” (*see* Op. Br., 27; emphasis added). But the Federal Circuit “expressly overrule[d]” and “abandon[ed]” characterizing as ‘strong’ the presumption that a limitation lacking the word ‘means’ is not subject to § 112, para. 6.” *Williamson* at 1349. The Federal Circuit also “overrule[d] the strict requirement of ‘a showing that the limitation essentially is devoid of anything that can be construed as structure.’” *Id.* Collision’s recitation of the legal standard is thus outdated and should be ignored.

The term “multi-user detector decision unit” is not a term of art that a POSITA would recognize as having a definite meaning as a name for structure. Collision argues that the “multi-user detector decision unit” itself is the structure but a POSITA would not understand this to be any particular structure because it is not a term of art. (Mahon, ¶54). The term was coined by the patentee to describe what the patentee regarded as the point of novelty. That is, the patent differentiated the prior art from “the **present invention**[, which] provides for selecting the MUD at each iteration, or selecting the MUD within each bit window, based on certain criteria.” (’492 at 12:64-67; *see* Mahon, ¶55; emphasis added). Thus, a POSITA reading the ’492 Patent would understand that the multi-user detector decision unit using certain criteria to select the MUD was the difference between the purported invention and the prior art (Mahon, ¶55). As a result, Collision cannot dispute that the term “multi-user detection decision unit” is not a term that was used in common parlance or by a POSITA to designate structure, but instead it was coined for this patent. *Advanced Ground Info. Sys., Inc.*, 830 F.3d at 1348; *Diebold Nixdorf, Inc.*, 899 F.3d at 1297, 1301-02.

Collision ignores that the term was coined for the purposes of the ’492 Patent and argues a POSITA can determine the structure by looking to disclosure in the specification. Collision,

however, fails to state that the term “multi-user detection decision unit” is limited to the structures identified in the patent. Instead, Collision effectively argues that the term covers all known structures for performing the required decision, and then cites examples in the specification for performing that function. Identifying examples of possible structure that perform the function is not sufficient to show that the term itself connotes structure. *Diebold Nixdorf, Inc.*, 899 F.3d at 1297, 1301 (finding § 112(6) applicable where the expert “failed to offer any structural limitation that might serve to cabin the scope of the functional term”).

Moreover, the specification excerpts Collision points to do not provide any additional information on the structure of the “multi-user detection decision unit:”

- “Based upon the **decision logic**, the MUD is chosen 320 for the particular window of data.” (’492 at 18:1-2; *see* Op. Br., 26; emphasis in brief).
- “The **decision logic** unit 520 selects which MUD to use based on **certain metrics** . . .” (’492 at 19:24-25; *see* Op. Br., 26; emphasis in **brief** and **added**).
- “Inside the turbo loop, a decision is made by the **MUD decision unit** 220 as to which MUD decoder to use based on **certain criteria**.” (’492 at 14:33-35; *see* Op. Br., 26; emphasis in **brief** and **added**).

But simply stating that “decision logic” uses “certain metrics” or “certain criteria” to select a MUD does not identify to a POSITA a sufficiently definite structure.

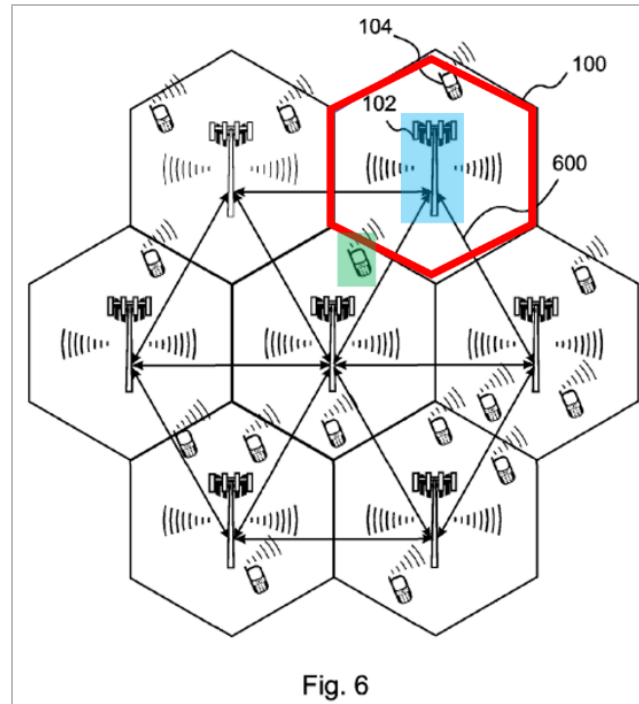
Collision also argues that “multi-user detector decision unit” must have a structure because the claim says it is “coupled to” a “parameter estimator,” but this connection does not tell a POSITA anything about what the multi-user detector decision unit is. *See Uniloc USA, Inc. v. Samsung Electronics America, Inc.*, 2:17-CV-651-JRG, 2018 WL 5296046 (E.D. Tex. 2018 Oct. 25, 2018) (“Although the function performed by the step calculation logic involves the accelerometer, the accelerometer is not part of the step calculation logic itself. Plaintiff’s reliance on ‘inputs and outputs’ is unavailing.”); *see also Williamson* at 1351. Collision’s cited case are distinguishable because, as explained above, they apply the incorrect legal standard.

Thus, “multi-user detector decision unit” does not connote structure and should be construed as a means plus function element. The parties dispute whether the corresponding structure is “decision logic” or a “processor.” “Decision logic” refers to an algorithm, not a structure. *See Egenera*, 972 F.3d at 1375 (“‘logic’ is no more than a ‘black box recitation of structure’ that is simply a generic substitute for ‘means’”). Collision appears to concede this point as it state that “[d]ecision logic was well understood by POSITA *as being implemented* with computer circuitry and following an algorithm or series of instructions for selecting among options” (Op. Br. at 26). Thus, “decision logic” itself is not a structure but could be implemented by a structure, such as computer circuitry. Accordingly, Collision has not proposed a corresponding structure. In contrast, Defendants’ proposed structure is consistent with how a person of ordinary skill in the art would understand the specification (Mahon, ¶¶54-60).³

V. THE ’479 PATENT AND ’561 PATENT

The ’479 and ’561 Patents, which share common specifications, purport to solve a problem relating to interference caused by cell phones outside a base station’s coverage area. Figure 6 from the specification shows eight base stations, including the exemplary base station in blue below:

³ To the extent it would resolve the dispute regarding structure, Defendants would be amenable to replacing “processor” with “computer circuitry” in its proposed corresponding structure.



The blue base station serves cellphones in the geographic area outlined in red. Cellphones outside of this geographic area, such as that highlighted green, transmit signals that are intended for a different base station, but are received by the blue station. These signals interfere with the signals that the blue base station is intended to receive, i.e., signals from the cellphones within the red geographic area.

According to the '479 and '561 claims, the base station serving the green phone sends the green phone operating parameters that “minimize changes” to the interference at the blue base station. Note that the patent does not require minimizing interference at the blue base station, but rather minimizing *changes* to the interference at the blue base station. As the applicant explained in prosecution: “[a]s a simple example, if the interference level were 5, [the prior art] would make changes to reduce the interference level to 1 or 0” ('479 Patent FH, 2; Mahon, ¶75). In contrast, the purported invention “minimizes changes to the interference level such that if the interference level were 5, operating parameters are set to keep it at 5.” ('479 Patent FH, 2; Mahon, ¶75)

A. “[determining/determine] revised operating parameters for the [first/second] UE that minimize changes to” (’479 Claims 1, 12, 23; ’561 Claims 1, 13, 25)

Defendants’ Construction	Collision’s Construction
“[determining/determine] revised operating parameters for the [first/second] UE that result in the smallest possible change to”	plain and ordinary meaning

The parties’ dispute centers on the meaning of the term “minimize.” The parties agree that this term should be given its plain meaning, but disagree on what the plain meaning is.

The plain meaning of minimize is to “reduce to a minimum” or “reduce to the smallest possible amount.” This is shown, for example, in the Oxford English Dictionary, which defines “minimize” as “[r]educe to the smallest possible amount, extent, or degree.”⁴ Similarly, the Collins Mini English Dictionary defines minimize as “reduce to a minimum; belittle” and minimum as “least possible (amount or number).”⁵ This is consistent with how a person of skill in the art understands the term; to determine parameters that minimize changes to interference means to determine parameters that result in the smallest possible change to interference (Mahon, ¶¶74, 80).

Plaintiff contends for the first time in its brief that the plain meaning of “minimize” is “to have little or no effect.” At the outset, Plaintiff’s new construction should be rejected because it would render the claim indefinite. When “faced with a ‘purely subjective’ claim phrase,” courts are to “look to the written description for guidance,” and the intrinsic record “must provide objective boundaries for those of skill in the art.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Plaintiff’s construction of “minimize” includes a term of degree, i.e., “to have little... effect” and the specification provides no guidance on how to apply this phrase. A POSITA cannot determine with reasonable certainty how much change in interference is permitted

⁴ *Minimize*, *The New Shorter Oxford English Dictionary on Historical Principles* (1993) (Mahon, Ex. 2).

⁵ *Minimize and Minimum*, *Collins Mini English Dictionary* (5th ed. 2013) (Mahon, Ex. 3).

by the phrase “have little effect.” If a base station’s interference level is at “5,” and then parameters are revised that result in an interference level of 4.5, did the parameters have “little effect” on the change in interference? What if the revised parameters result in a slightly bigger change, e.g., a change in interference level from 5 to 4, or from 5 to 3.5? The specification provides no guidance to a POSITA on how to draw the line. Plaintiff has not offered any expert testimony supporting its apparent position that a POSITA would understand the bounds of “have little effect” and has identified no part of the specification that would enable a POSITA to make this determination.

Further, plaintiff’s construction does not reflect the plain meaning of “minimize.” Plaintiff failed to cite any dictionary or other extrinsic evidence supporting its definition. Plaintiff claims that its definition is supported by the specification, but the specification never redefines the term “minimize.” Plaintiff points to several embodiments in the specification, but none support its position. For example, Plaintiff points to an embodiment that states that the parameters “have little or no effect on background interference,” but the specification does not say this is a definition of “minimize.” Furthermore, this embodiment supports Nokia’s construction because it shows the inventors knew how to use the phrase “little or no effect” when they wanted to; they chose not to do so in the claim. Plaintiff also points to embodiments that “minimiz[e] fluctuations of background interference” or “reduc[e] the fluctuation of the background interference,” but again, the inventors did not use these words in the claim. None of the plaintiff’s excerpts purport to redefine “minimize,” and thus they are irrelevant.

Finally, plaintiff’s contention that a POSITA would not be able to determine the smallest possible change to interference is unsupported attorney argument and simply wrong. Revising different parameters by different amounts results in different levels of interference, which a POSITA can calculate. This claim element simply requires the parameters to be configured in the

way that results in the lowest amount of change to the level of interference (Mahon, ¶¶74, 78, 80). Notably, plaintiff did not offer an expert opinion supporting its position that a POSITA cannot determine the configuration of parameters that would result in the lowest change to interference.

VI. CONCLUSION

For the foregoing reasons, Defendants respectfully request that the Court adopt Defendants' constructions.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on June 9, 2022, to all counsel of record via electronic mail.

/s/ Warren Lipschitz

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